in the Museum is a very poor one; and the Ranidæ from all parts of India must be assiduously collected before sound results can be obtained. Let us hope that an urgent appeal for frogs from all parts of India [and Ceylon, W. F.] will be liberally responded to by local naturalists and collectors, without which aid the subject must long remain in its present unsatisfactory state. Each contributor should not send merely the most conspicuous frogs from his neighbourhood, but all the species and varieties he can procure."

As an illustration of the liability to add to and perpetuate the confusion connected with some of the frogs and other reptiles, I may refer to a rare Ceylon frog found first on Adam's Peak several years ago by Dr. Schmarda, Professor of Zoology in the University of Prague. On a fly-sheet after page 21 of the second part of Dr. Kelaart's 'Prodromus of the Faunæ of Ceylon,' published in 1853, this frog is very briefly described by the late Dr. Kelaart under the following name, "*Polypedates* (?) *Schmarda*, n. s. nobis"—the "*Schmarda*" being no doubt a slip of the pen for "*Schmardana*," under which latter name, and under the genus *Ixalus*, Günther refers to this then doubtful frog in his 'Indian Reptiles,' p. 433. Theobald, in his Catalogue referred to, p. 85, gives this frog as follows:—"*Polypedates smaragdinus*, Kelaart; Ceylon. Eyebrows armed with spines. Limbs studded with tubercular sharp-pointed spines. A very peculiar species, and probably a distinct generic form." Jerdon, in the paper referred to, pp. 83, 84, and Anderson, in his list of accessions to the collection of reptiles in the Indian Museum since 1865, refer distinctly to an Indian frog described by Blyth in footnote to p. 48 of Appendix to Kelaart's 'Prod. Faun. Zeyl.' as the *Polypedates smaragdinus*, found on the Khasi hills. The specific name here means *emerald-green*; and Mr. Theobald's *P. smaragdinus* ought to have been *P. Schmardana*. On page 85 of the 'Annals and Magazine of Natural History' for January 1872, containing "Descriptions of some Ceylonese Reptiles and Batrachians" by Dr. Günther, this frog is finally, and I suppose properly, named, though not yet described, as *Ixalus Schmardanus* (Kelaart).

XVII.—*On the Genus* Deidamia, v. W.-S. By JAMES WOOD-MASON, of Queen's College, Oxford.

AT the last meeting of the Asiatic Society of Bengal, held on the 5th of August last, I drew attention to the fact that a Crustacean precisely similar in general structure to several lately discovered by the 'Challenger,' and upon which Dr. v. Willemoes-Suhm (one of the naturalists to the expedition) had bestowed the name *Deidamia*, had long before been described by Professor Camil Heller under the name of *Polycheles typhlops*. In this remarkable Crustacean the organs of vision are morphologically entirely wanting, just as in *Deidamia*, the position of the eye-stalks being merely indicated by two small black specks. The name *Deidamia* having been held to be inadmissible *, as having been already employed for a valid genus in another division of Arthropoda, and *Willemoesia* substituted for it upon the daring and, as it seems to me, dangerous assumption that every animal dredged up from so vast a depth as were the *Deidamiæ* would prove generically different from every thing previously described, I have thought it worth while to translate, for publication in the 'Annals and Magazine of Natural History,' Professor Heller's later and more methodical account of his wonderful blind Crustacean from the Mediterranean. The conclusions that I have arrived at, after a most careful study of Heller's figures and descriptions in comparison with those published in Prof. Wyville Thomson's Reports, are:—

1. That the three species *Polycheles typhlops*, *Deidamia leptodactyla*, and *D. crucifer* cannot be placed in any existing family of crustaceans, recent or fossil, except perhaps the Eryonidæ, the structural characters of which are too incompletely known at present to admit of their being included in it.

2. That the three species in question belong *naturally* to one and the same family.

3. That they cannot be distinguished from one another even *generically*.

I therefore beg to propose for them a new family name, and to regard all three as members of its single genus *Polycheles*, as follows:—

Fam. nov. **Polychelidæ.**

Genus unic. POLYCHELES, Heller.

a. *With the four anterior pairs of walking-legs didactyle.*

Species 1. *Polycheles typhlops*, Heller.
2. —— *crucifer*, v. W.-S.

b. *With all the walking-legs didactyle.*

3. *Polycheles leptodactyla*, v. W.-S.

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* 'Nature,' 1873, vol. viii. p. 485; 1874, vol. ix. p. 182.

The following is a translation of pp. 209–212 of Professor Heller's work*, entitled 'Die Crustaceen des südlichen Europa' (Vienna, 1863).

Genus POLYCHELES, C. Heller,

Sitzungsberichte der kais. Akademie der Wissenschaften in Wien, Bd. xlv. Abth. i. p. 389.

Integument thin. Cephalothorax longish quadrangular, in front and behind moderately tapering, above quite level from before backwards, and slightly convex from side to side: the fore margin hollowed out, the two lateral angles pointed; between these and the middle line, behind the insertion of the inner antennæ, on each side a triangular notch; the lateral borders sharp, tolerably straight, the hinder border deeply emarginate. The cervical furrow on the upper surface distinct. Eyes rudimentary. Antennæ of moderate length, the external ones inserted below and internal to the inner. Peduncle of the inner (upper) antennæ flattened; the first joint very broad, and provided on the inner side with a long spine directed forwards; the two succeeding joints short; of the two flagella the inner long, the outer short. Peduncle of the outer antennæ somewhat longer than that of the inner; the short triangular basilar joint armed at the anterior extremity with a small spine; the two succeeding joints tolerably long and narrow; the flagella considerably shorter than the whole animal: the leaf-shaped appendage, which proceeds outwards from the basilar joint, narrow, thickly fringed with hairs on the margins, shorter than the peduncle. The external maxillipeds small and slender, somewhat shorter than the peduncle of the lower antennæ, six-jointed, externally without palps; the palp is likewise wanting in the second pair of maxillipeds. The first pair of maxillipeds is much elongated; in other respects formed just as in *Scyllarus*. Sternum narrow; the legs very closely approximated at their bases. The first four pairs of legs didactyle, and the last only terminated by a simple claw. The anterior much longer, though but little stouter, than the succeeding pairs, their several joints strongly compressed; the finger long, straight, and slender; the slight terminal claws strongly bent inwards. The hind body longer than the cephalothorax, at its base almost as broad as this, gradually tapering posteriorly, the upper surface arched from side to side; the strongly deflexed lateral processes tolerably broad and rounded off, especially those of the second segment. The fan-shaped caudal swimmeret well developed; its median

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* For figures *vide* plate vi.

plate brought to a point posteriorly; its lateral plates oval, almost equal in length to the former, the outer ones not divided into two halves by a transverse line. Five pairs of abdominal appendages are present in the male; those of the first segment are slender, with a single spirally coiled terminal plate; on the succeeding ones two long, narrow, terminal plates are always present; on the second, indeed, even a third accessory inner plate is added; the basilar joint is much elongated, but gradually diminishes in length backwards.

This species agrees in the general form of its body with the Scyllaridæ, from which, however, it is essentially distinguished by the different form of its antennæ, and by its didactyle legs, as well as by its narrow sternum. With the Astacidæ it has nothing in common, beyond the lamellar appendage at the base of the outer antennæ and the didactyle feet, but is in other respects perfectly different in structure from them. The genus conforms most nearly to the fossil crayfish (*Eryon Cuvierii*) from the Solenhofen Slates, described by Desmarest, in that in this latter also a flattened cephalothorax, antennæ, and legs of similar structure are found; the hind body, however, is in that species much narrower than the cephalothorax, and the lamellar appendage at the base of the outer antennæ much enlarged. It forms with that extinct form a transitional group between the Scyllaridæ (Loricata), on the one hand, and the Astacidæ on the other.

Polycheles typhlops, C. Heller,

Beiträge zur näheren Kenntniss der Macrouren, Sitzungsb. der Akad. der Wiss. 1862, Bd. xlv. p. 392, Taf. i. f. 1–6.

The cephalothorax of this species measures 10 lines in length, in front 5, behind 5·4, and across the middle 6 lines in breadth. The lateral margins are tolerably sharp and distinctly toothed, especially towards the front, the lateral angles projecting, with their points directed forwards and outwards. The flat upper surface is divided by a distinct, anteriorly concave cervical furrow, into an anterior and posterior moiety, the lateral extremities of the same bifurcated outwards into two branches running to the margins, and there enclosing a triangular lateral area. Along the middle there runs from before backwards a sharp toothed ridge; another shorter and weaker longitudinal ridge is found on each side on the hinder half of the cephalothorax, somewhat nearer to the lateral margins than to the middle line. Towards the front on each side lie four or five sharp teeth, one behind the other, in a slightly curved, inwardly convex line; in addition, the whole upper surface is beset with minute rough tubercles. No distinct eyes are present; at the base of the peduncle of the inner antennæ, on each side, one perceives simply a small roundish black speck as the indication of an organ of vision. The peduncles of the antennæ are tolerably hairy, the internal spine of the peduncle of the inner antennæ longer than the peduncle itself. The anterior legs are very long, and when laid backwards reach beyond the caudal swimmeret: their several joints much compressed, the brachium 7·5, the antebrachium 3·5, the carpus 4, the dactyli 5 lines long; the brachium and antebrachium beset with one or two small spines on their outer margins; the hand is likewise provided on its upper and lower margins with some very fine teeth. The succeeding pairs of legs appear considerably shorter; the hand, particularly of the third and fourth pairs of legs, almost prismatic, quadrangular; the finger slender, slightly hairy; the terminal joint of the fifth pair much shorter than the conical tarsus; the coxa provided on its inner side with two roundish projecting scales, behind which lie the orifices of the male genital organs. The first abdominal segment is flat on its upper surface, the four succeeding furnished with a well-marked salient sharp median ridge, which is prolonged at the end of each segment into an acute anteriorly hamate and incurved spine; this spine is most highly developed on the fourth segment. The median ridge is but little indicated on the sixth segment, and bifurcates anteriorly. The pointed triangular median plate of the caudal swimmeret roughly granulated at the base, provided with two ridges converging towards the tip on the hinder half. The plates of the swimmeret are all strongly ciliated on their margins. Length of the body 2 inches.

A single male specimen of this interesting species, found in the Mediterranean near Sicily, exists in the Zoological Museum at Vienna.

XVIII.—*Notes on certain Genera of* Agaristidæ, *with Descriptions of new Species.* By ARTHUR GARDINER BUTLER, F.L.S., F.Z.S., &c.

[Plate XIII.]

THE following notes I have made during my rearrangement of the Agaristidæ in the collection of the British Museum.

The genera *Hespagarista* and *Damias* (part.), placed by Mr. Walker among the Castnii, are referable to the present family,